

Saint-Gobain Norton® FEP Fluoropolymer Film

Category : Polymer , Film , Thermoplastic , Fluoropolymer , FEP

Material Notes:

Features/Benefits: Outstanding clarity Outstanding anti-stick release properties Performance from -254Â°C (-425Â°F) to 205Â°C (400Â°F) Exceptional chemical resistance and electric properties Complies with FDA requirements Product thicknesses from 0.0005" to 0.010" and up to 48" for over 0.010" thick Optically transparent and pigmented All films are manufactured and converted in class 100,000 clean room facility Available in cementable (surface treated) form Norton® FEP fluoropolymer film is manufactured from fluorinated ethylene propylene (FEP) resin by Saint-Gobain Advanced Films and Fabrics in four grades. Norton® FEP Type FG utilizes the low dielectric constant and dissipation over a wide range of temperatures and frequencies for low signal distortion and attenuation in flexible printed circuit and flat cable applications. The high surface and volume resistivity minimizes current leakage and provides excellent insulation in wire and cable applications. Norton® FEP also provides the chemical and thermal resistance to withstand aggressive environments, making it an excellent candidate for diaphragms, gaskets, protective linings, sample bags, and containers. Fabricated shapes and contours can be produced via heat sealing and thermoforming. The outstanding weatherability and optical properties of Norton® FEP film provide excellent performance in environmental growth chambers and solar collectors. Norton® Type FS is a translucent film made from high molecular weight resin for applications where high flex life and stress-crack-resistant performance are required, such as tank linings and diaphragms. Norton® FEP Type RF is a clear or pigmented film designed for release applications. The non-stick surface, chemical resistance, and 205Â°C (400Â°F) usage temperature make Norton® FEP an ideal release film for composite molding over a wide range of resin systems. High elongation and a smooth, low-gel film surface allow Norton® FEP to conform to complex mold contours and produce a smooth part finish. Perforated film is available to control outgassing and resin bleed. Pigmented films increase visibility to speed removal from parts and mold. Norton® FEP Type WF (mechanical grade) film is an ideal economical solution for applications that don't require high aesthetic standards, such as hot melt adhesive (welding tape) application. FEP WF film possess all physical, mechanical, and thermal properties of FEP FG grade, while offering up to 15% savings. Surface Treatments Available: C-Treatable (cementable, 1 or 2 sides); Corona Treatment (1 or 2 sides); Chemical Etching (1 or 2 sides) Flammability (UL-94) = V - 0 Used for Aerospace/Release Films, Chemical Process, Electrical/Electronics, Medical, Protective/Decorative. Specification Notes: All values represent typical performance properties and should not be used for specification purposes. Information provided by Saint Gobain Performance Products.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Saint-Gobain-Norton-FEP-Fluoropolymer-Film.php

Physical Properties	Metric	English	Comments
Specific Gravity	2.12 - 2.17 g/cc	2.12 - 2.17 g/cc	ASTM D-792
Water Absorption	<= 0.010 %	<= 0.010 %	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	24.1 MPa	3500 psi	ASTM D-882
Elongation at Break	300 %	300 %	ASTM D-882
Tensile Modulus	0.483 GPa	70.0 ksi	ASTM D-882
Tear Strength	87.3 - 108 kN/m	498 - 616 pli	Initial Tear Strength; ASTM D-1004

Mechanical Properties	Metric	English	Comments
Elmendorf Tear Strength, MD	8.71 - 8.91 g/micron	145 - 150 g/mil	(direction not reported), Propagation Tear Strength; ASTM D-1922

Thermal Properties	Metric	English	Comments
CTE, linear	99.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature 20.0 $\text{Å}^\circ\text{C}$	55.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature 68.0 $\text{Å}^\circ\text{F}$	ASTM D-696
Specific Heat Capacity	1.17 J/g- $\text{Å}^\circ\text{C}$	0.280 BTU/lb- $\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.195 W/m-K	1.35 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM D-2863
Melting Point	252 - 282 $\text{Å}^\circ\text{C}$	485 - 540 $\text{Å}^\circ\text{F}$	ASTM D-3418
Maximum Service Temperature, Air	204 $\text{Å}^\circ\text{C}$	400 $\text{Å}^\circ\text{F}$	UL-746 B
Flammability, UL94	V-0	V-0	
Oxygen Index	$\geq 95\%$	$\geq 95\%$	ASTM D2863

Optical Properties	Metric	English	Comments
Refractive Index	1.35	1.35	ASTM D542
Transmission, Visible	96 %	96 %	ASTM E424

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1.00e+15 ohm	1.00e+15 ohm	ASTM D-257
Dielectric Constant	2.1 @Frequency 1000 Hz	2.1 @Frequency 1000 Hz	ASTM D-150
Dielectric Strength	236 kV/mm	6000 kV/in	ASTM D-149
Dissipation Factor	0.00030	0.00030	ASTM D-150

Descriptive Properties	Value	Comments
Fold Endurance (MIT) (cycles)	10000	ASTM D-2176

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